

IN THE CLAIMS

Claim 1 has been amended as follows:

1. (Currently amended) A method for automatically determining a speed of a flowing medium in a magnetic resonance tomography flow measurement, comprising the steps of:

acquiring an overview magnetic resonance image of a selected area of a living subject;

displaying said overview image on a screen;

performing a scout flow measurement by acquiring a magnetic resonance image series of said subject during a motion cycle of said subject at a predetermined speed interval in a tissue area within said overview image, said tissue area containing a flowing medium;

determining from said scout flow measurement, determining a peak speed of said flowing medium in said tissue area;

performing an optimized flow measurement by acquiring respective images, corresponding to selected images in said image series, dependent on said peak speed; and

displaying on said screen a speed-resolved image including said tissue area, obtained by said optimized flow measurement in a display format selected from the group consisting of a speed-resolved image of said tissue area encompassing an average speed of said flowing medium and a speed resolved image of said tissue area together with a generated speed profile of said flowing medium in said tissue area.

2. (Original) A method as claimed in claim 1 comprising automatically performing said optimized flow measurement immediately after performing said scout flow measurement.

3. (Original) A method as claimed in claim 1 comprising adding a safety margin to said determined peak speed.

4. (Original) A method as claimed in claim 3 comprising employing a value as said safety margin that is 10% of said peak speed.

5. (Original) A method as claimed in claim 1 employing a time, as said motion cycle, selected from the group consisting of a breathing cycle of said subject and a cardiac cycle of said subject.

6. (Original) A method as claimed in claim 1 comprising acquiring said image series in said scout flow measurement at approximately 20 images per motion cycle.

Claims 7 and 8 have been cancelled.

7. - 8. (Cancelled)

9. (Original) A method as claimed in claim 1 comprising manually marking said tissue area in said overview image displayed on said screen.

10. (Original) A method as claimed in claim 1 comprising designating a plurality of tissue areas within said overview image, and displaying a speed-resolved image for each of said plurality of tissue areas.

Claim 11 has been amended as follows:

11. (Currently amended) A magnetic resonance imaging device comprising:

a magnetic resonance scanner adapted to receive a subject therein;

a control computer connected to said magnetic resonance scanner;

a display screen connected to said control computer; and

said control computer being programmed to operate ~~operating~~ said magnetic resonance scanner ~~for acquiring~~ to acquire an overview magnetic resonance of a selected area of a living subject, ~~displaying and to display~~ said overview image on a screen, ~~performing and to perform~~ a scout flow measurement by ~~acquiring~~ causing said magnetic resonance scanner to acquire a magnetic resonance image series of said subject during a motion cycle of said subject at a predetermined speed interval in a tissue area within said overview image, said tissue area containing a flowing medium, ~~determining and to determine~~ from said scout flow measurement, ~~determining~~ a peak speed of said flowing medium in said tissue area, ~~performing and to perform~~ an optimized flow measurement by acquiring respective images, corresponding to selected images in said image series, dependent on said peak speed, and ~~displaying on said screen~~ to display a speed-resolved image including said tissue area, obtained by said optimized flow measurement on a screen in a display format selected from the group consisting of a speed-resolved image of said tissue area encompassing an average speed of said flowing medium and a speed

resolved image of said tissue area together with a generated speed profile of said flowing medium in said tissue area.

Claim 12 has been amended as follows:

12. (Currently amended) A ~~computer software product~~ computer-readable medium encoded with a data structure, said computer-readable medium being loadable into a control computer of a magnetic resonance imaging apparatus, said magnetic resonance imaging apparatus including a magnetic resonance scanner operated by said control computer, and a display screen connected to said control computer, and ~~said computer program product running in said control computer and~~ data structure causing said control computer to:

acquire an overview magnetic resonance of a selected area of a living subject;

display said overview image on a screen;

perform a scout flow measurement by acquiring a magnetic resonance image series of said subject during a motion cycle of said subject at a predetermined speed interval in a tissue area within said overview image, said tissue area containing a flowing medium;

determine from said scout flow measurement, determining a peak speed of said flowing medium in said tissue area;

perform an optimized flow measurement by acquiring respective images, corresponding to selected images in said image series, dependent on said peak speed; and

display on said screen a speed-resolved image including said tissue area, obtained by said optimized flow measurement in a display format selected from the group consisting of a speed-resolved image of said tissue area encompassing an average speed of said flowing medium and a speed resolved image of said tissue area together with a generated speed profile of said flowing medium in said tissue area.